

REMARKS

The above-noted amendments to claims 15 and 22 are respectfully submitted in response to the official action dated October 8, 2008. These amendments include limitations previously set forth in claims 18, 19, 25 and 27, as well as specifically requiring that divergent propagation of the flowing medium comprise diverging from a first end corresponding to the conduit conically outwardly to the second end corresponding to the edge of the passage thereof. Each of these limitations was either included in previous claims, or specifically set forth in the specification, such as at page 5, line 30 to page 6, line 2, and other places throughout the specification. It is therefore respectfully submitted that no new matter is included in these amendments, and entry of these amendments is therefore respectfully solicited.

Claims 15, 18, 20-22, 25, 26 and 28 have been rejected as being unpatentable over Radvan et al. under 35 U.S.C. § 102(b) or 103(a). The Examiner contends that Radvan et al. discloses a headbox of a papermaking machine for delivering fibrous stock to a foraminous wire. The headbox is provided with a supply conduit 2 and slice 1 with a passage 4 which is said to be shaped with an increasing depth towards outlet 3. The taper of the outlet is said to modify the flow of the stock onto the wire, and in the case where a foam stock is used, the outlet 3 allows for an increase in stock volume.

Regarding claims 15 and 22, Radvan et al. is said to disclose a headbox for propagation of a flowing medium, including supply conduit 2, a distribution (slice) with two frictional surfaces and a first depth diverging to outlet 3 having a second depth greater than the first depth, and a passage 4 having edges extending transversely to the direction of flow. The headbox is said to be shaped so that propagation of the stock is substantially even and parallel along the outlet

gap, and it is said to be obvious to provide a headbox providing for propagation to deliver transversely uniform stock to the wire.

Regarding claims 18 and 25, Example 1 is said to disclose an outlet depth of 10 mm which is said to be two times that of inlet depth 5 mm.

Regarding claims 20 and 26, the slice outlet is said to have a rectangular cross-section.

Regarding claims 21 and 28, the two 90° bends for redirecting flow are referred to.

This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Radvan et al. does disclose a papermaking apparatus in which papermaking stock is delivered to a wire or foraminous support. In this case the slice in the headbox includes a slot through which the stock flows and which is said to be shaped to impart turbulence to the stock. An air supply passage is also provided communicating with the stock to introduce pressurized air thereinto.

It is first noted that this rejection was not applied to claim 19 since it clearly does not disclose the limitations thereof. In any event, however, it is respectfully submitted that, in the first instance, the Radvan et al. reference does not disclose diverging propagation in any respect. More particularly, amended claim 15 now requires diverging the flowing medium from the conduit conically outwardly to the second end corresponding to the edge, and even more particularly requires that the edge be shaped in the form of a circular arc to effect propagation of the flowing medium within the distribution gap to provide a substantially even and parallel flow of the flowing medium along the outlet gap. On the other hand, Radvan et al. simply provides for turbulent flow created

by the slot including two oppositely directed right-angle portions 6 and 7 therewith, as well as injection nozzle 8 for injecting high-pressure air thereinto. Furthermore, although the outlet gap 3 shown in Radvan et al. does appear to be higher or deeper than the central portion 4 of the passage, there is no indication whatsoever that the outlet gap has a depth which is from 1.2 to 4 times greater than the depth of the distribution gap of the present invention. Similarly, with respect to claim 22, Radvan et al. once again fails to show each of these limitations, and particularly does not show a distributor which includes a distribution gap which diverges conically from a first end outwardly to a second end, nor an edge corresponding to the second end which is shaped in the form of a circular arc, as required by these claims. It is therefore respectfully submitted that the amended claims in this application clearly and patentably distinguish over the Radvan et al. reference, and reconsideration of this rejection is respectfully requested.

Claims 15, 16, 18, 20-23, 25, 26 and 28 have been rejected as being unpatentable over Reiner under 35 U.S.C. § 102(b) or 103(a). The Examiner contends that Reiner discloses a distributor for a fibrous suspension for delivery to a paper machine including a channel made up of varying channel heights and/or bends which produce turbulence for disintegration of fiber flocks in the suspension. Reference is made to Figure 4 thereof in which a channel cross-section is said to have a channel height H1 with bends, followed by decreasing channel height H2, followed by increased channel height H4, transforming into outlet 1. Figures 7 and 8 are said to show cross-sections of outlets preceded by channels with increasing height.

With respect to claims 15 and 22, reference is made to supply conduit 7, a distribution gap with a first depth H2 diverging to outlet 1 with a second depth H4 greater than the

first depth, and a passage 14 in between having edges transverse to the flow direction, specifically at location L3 in Figure 4. The distributor is said to be shaped so that propagation is substantially even and parallel along the outlet gap, and it is said to be obvious to provide a headbox providing for this propagation.

With respect to claims 18 and 25, column 6 is said to disclose exemplary gap depth and gap H4 of 4 mm is said to be twice the depth H2 of 2 mm.

This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Turning to Reiner, in many ways it is similar to Radvan et al. in terms of the nature of its teaching and in particular the specific elements of the present claims which are entirely missing from this reference. Once again, there is no teaching or suggestion whatsoever in Reiner (as was the case with Radvan et al.) of any apparatus or method in which diverging propagation of a flowing medium takes place along a distribution gap, and in particular in which the flowing medium diverges from a first end corresponding to a conduit conically outwardly to the second end. Furthermore, there is no suggestion whatsoever therein of such an apparatus or method in which the second end of the distribution gap corresponding to the edge of the passage has a depth which is from 1.2 to 4 times greater than the depth of the passage itself, nor more particularly in which the edge is shaped in the form of a circular arc in order to propagate the flow medium to provide a substantially even and parallel flow of the medium along the outlet gap.

Once again in the case of Reiner, as was the case in Radvan et al., no reference whatsoever is made to these

limitations, and it is clear that Reiner neither teaches nor suggests the presently claimed method or apparatus.

Claims 15, 16, 18, 20, 22, 23, 25 and 26 have been rejected as being unpatentable over Bubik *et al.* '870 under 35 U.S.C. § 102(b) or 103(a).

The Examiner contends that Bubik *et al.* '870 discloses a headbox for a papermaking machine with a guide channel for a stock suspension which includes at least two step-like widened portions. These are said to form micro-turbulence in the stock suspension producing a uniform distribution of the fibers. Referring to Figures 2 and 3, the Examiner refers to guide channel 5 provided with an upper surface with two step-shaped widened portions 17 opposite lower side surface 18. The first step portion 17 has a height H and the second step portion 17 is said to have a height H' which is said to be greater than H. The pulp feed channel 6 which is said to be an outlet of guide channel 5, is said to be equipped with step-shaped widened portions 31, 32 and 34 for the purpose of maintaining micro-turbulence. With respect to claims 18 and 25, it is stated that the depth H' is at least twice that of the depth S. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Applicants initially submit that once again in this case, as with both the Radvan *et al.* and Reiner references, the Bubik *et al.* '870 patent includes no reference or suggestion whatsoever with respect to any method or apparatus for diverging propagation of a flowing medium along a distribution gap by diverging the flowing medium conically outwardly from a first end to a second end. Furthermore, there is no disclosure therein of such a method or apparatus in which the depth of the outlet gap is from 1.2 to 4 times greater than the depth of the distribution gap, and more particularly in which the edge of the

passage corresponding to the second end of the distribution gap is shaped in the form of a circular arc so that propagation of the flowing medium provides a substantially even and parallel flow of the flowing medium along the outlet gap. The Examiner does contend that the height H' in the guide channel 5 corresponding to the outlet gap in Figure 3 is at least two times the height S in the initial portion of the guide channel. However, there is no reference to this in the specification of Bubik et al. '870. In this regard, reference is made to M.P.E.P. § 2125:

PROPORTIONS OF FEATURES IN A DRAWING ARE NOT EVIDENCE OF ACTUAL PROPORTIONS WHEN DRAWINGS ARE NOT TO SCALE

When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000) (The disclosure gave no indication that the drawings were drawn to scale. "[I]t is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."). However, the description of the article pictured can be relied on, in combination with the drawings, for what they would reasonably teach one of ordinary skill in the art. *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977) ("We disagree with the Solicitor's conclusion, reached by a comparison of the relative dimensions of appellant's and *Bauer's* drawing figures, that *Bauer* 'clearly points to the use of a chime length of roughly 1/2 to 1 inch for a whiskey barrel.' This ignores the fact that *Bauer* does not disclose that his drawings are to scale. ... However, we agree with the Solicitor that *Bauer's* teaching that whiskey losses are influenced by the distance the liquor needs to 'traverse the pores of the wood' (albeit in reference to the thickness of the barrelhead)" would have suggested the desirability of an increased chime length to one of ordinary skill in the art bent on further reducing whiskey losses." 569 F.2d at 1127, 193 USPQ at 335-36.)

It is thus clear that, even with respect to this limitation, there is no specific disclosure in Bobik et al. '870 regarding same. In any event, however, applicants have referred to the other limitations in claims 15 and 22 which are critical to the present invention, in particular with respect to the

diverging propagation of the flowing medium therein, which is nowhere taught, suggested, or even hinted at in Bobik et al. '870. It is therefore respectfully submitted that this rejection is also inappropriate and should be withdrawn.

Claims 15-18, 20, and 22-26 have been rejected as being unpatentable over Bobik et al. '092 under 35 U.S.C. § 102(b) or 103(a). The Examiner contends that Bubik et al. '092 discloses a headbox for a material suspension being supplied to a paper machine including first and second walls forming a path towards an outlet nozzle, and in which the cross-sectional height Z steadily decreases in the flow direction and then continually increases towards the nozzle. This is said to cause flow deceleration in the end region so that no substantial turbulence arises. The diverging path is said to be designated L2 in Figures 1 and 2.

With respect to claims 18 and 25, the disclosed depths are said to make it possible for the outlet depth Z to be 1.2 to 4 times the inlet depth. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Once again, the Bubik et al. '092 reference is similar to the references discussed above, at least with respect to the utter lack of any disclosure with respect to the essential limitations of the present claims, as discussed above. Bubik et al. '092 thus once again discloses a headbox for use in the manufacture of paper. In this case, crosswise stiffness is said to improved because the breaking length ratio L/Q can be reduced if possible. In all other respects, however, it is once again clear that Bubik et al. '092 fails to teach or suggest any method or apparatus for propagation of a flowing medium employing diverging propagation of the flowing medium conically outwardly from the first end of the distribution gap to the second end, corresponding to the edge of the passage thereof.

Once again, no structure or method for doing so is suggested by Bubik *et al.* '092 nor by the Examiner in reference thereto. Furthermore, Bubik *et al.* '092 fails to specifically disclose an outlet gap having a second gap which is from 1.2 to 4 times greater than the depth of the distribution gap. The Examiner only refers in this regard to a conclusion that it is "possible" to create such a result from Bubik *et al.* '092, but not that it actually discloses same. In addition, it is also quite clear that Bubik *et al.* '092 includes no reference or suggestion whatsoever of such a method or apparatus in which the edge of the passage corresponding to the second end of the distribution gap is shaped in the form of a circular arc in the manner required by these claims. It is therefore once again clear, and the Examiner apparently agrees, that Bubik *et al.* '092 does not anticipate or obviate the present claims.

Claims 15, 16, 19, 21-23, 27 and 28 have been rejected as being unpatentable over Fredriksson *et al.* in view of Bubik *et al.* '870. The Examiner contends that Fredriksson *et al.* discloses a distributor for a flowing medium such as a fibrous suspension which comprises a passage 8 formed by two walls and having a curvilinear shape transverse to the flow direction, a deflection surface 11 for the flowing medium, and an outlet gap for delivering the flowing medium. The distributor is said to be shaped so that the propagated medium is substantially even and parallel along the outlet gap. The Examiner then admits that Fredriksson *et al.* discloses a passage of constant depth rather than one having an outlet gap with a depth greater than that of the passage. Bubik *et al.* '870, however, is said to disclose a headbox comprising a guide channel having at least two step-like widened portions. The Examiner thus concludes that it would be obvious to modify the passage in the distributor of Fredriksson *et al.* to be shaped as that of Bubik *et al.* '870 to uniformly distribute the suspension as taught by

Bubik et al. '870. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Turning first to Fredriksson et al., this patent is directed to the distribution of a flowing medium in a transverse direction. In this case, the distribution housing has a wide outlet opening 2 and a feed line 3 for the fibrous suspension. The housing itself includes a distribution chamber 5 arranged across the feed line 3 which does diverge outwardly to a transversely curved passage, with a deflection surface 11 and an outlet chamber 6 extending in the opposite direction from the deflection in the passage 8 to the outlet 2. These two chambers 5 and 6 are separated by an inner wall 7 and communicate with each other through passage 8. Passage 8 is curved in the transverse direction defined by the free end of inner wall 7.

It is thus clear that, if any element in Fredriksson et al. corresponds to the required distribution gap, it would be the distribution chamber 5. However, the second end of the distribution chamber 5 does not correspond to the required edge of the passage in the present claims, but corresponds to the deflection surface 11 leading into chamber 6 and eventually into outlet 2. It is thus clear that Fredriksson et al. accomplishes its purpose in an entirely different manner from that required by the present claims. In addition to the above, and as admitted by the Examiner, there is no reference whatsoever to any edge of the passage which is either transverse to the direction of flow of the flowing medium or, even more importantly, which has a depth which is from 1.2 to 4 times greater than the depth of the distribution gap, or indeed any greater depth than same.

In attempting to overcome these admitted deficiencies, the Examiner thus combines Fredriksson et al. with Bubik et al.

'870. However, there is no motivation whatsoever to amend the structure of Fredriksson *et al.* to incorporate any of the elements of Bubik *et al.* '870 thereinto. Indeed, the object of Fredriksson *et al.* is to create a stream which exits from outlet opening 2 to allegedly provide a uniform and parallel flow of the flowing medium. On the other hand, the object of the structure shown in Bubik *et al.* '870 is quite the opposite; namely, to create turbulence in order to allegedly process stock suspensions of higher consistency therein. It is only when faced with the disclosure in the present application, and the method and apparatus now claimed, that one would have even considered the combination of these contradictory elements, and certainly not in the manner required by the presently amended claims.

It is therefore respectfully submitted that all of these claims now possess the requisite novelty, utility and unobviousness to warrant their immediate allowance, and such action is therefore respectfully solicited. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: February 6, 2009 Respectfully submitted,

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